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QUARTERLY REPORT

FOR

MAGSAT SCIENCE INVESTIGATIONS

Contract NAS 5-26328

For the period

submitted to

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GODDARD SPACE FLIGHT CENTER
Greenbelt, Maryland 20771

by

BUSINESS AND TECHNOLOGICAL SYSTEMS, INC.
Aerospace Building, Suite 440
10210 Greenbelt Road
Seabrook, Maryland 20801

1.0 WORK ACCOMPLISHED DURING REPORT PERIOD

During this quarter modifications have been completed to existing equivalent layer magnetization modeling software to accomodate Magsat total field anomaly data. An initial inversion has just been completed using a data set supplied by R. Horner via GSFC. The initial model and associated field anomaly representation for the U.S. will be presented at the Baltimore AGU meeting. The associated vector field will be compared with preliminary fine-attitude Magsat vector data. An initial data set has been obtained by us. New software for display of results is in progress or has been completed.

In other developments, software for spectral analysis of aeromagnetic profile data and computation of depth-to-magnetic-bottom is nearing completion. It is being tested through a series of simulations and will initially be applied to NOO Project Magnet profiles. Considerable time has been devoted to correcting errors in this data. Silica geotemperature data supplied by C. Swanberg has been interpolated to an equal area map grid for direct comparison with a magnetization model. Accumulation of correlative data continues.

2.0 WORK PLANNED FOR NEXT REPORTING PERIOD

1) Complete development of spectral analysis software and produce initial Curie depth model for comparison with models derived from Magsat data.

2) Complete software modifications to inversion for increased efficiency, reduced core, and capability of accomodating component input.

3) Produce initial magnetization model for U.S. for 200 km resolution.

4) Begin series of runs with new software to investigate resolution limit achievable with Magsat data.

3.0 FISCAL AND PLANNING DATA

Contract Price
Prior Expenditure
Expenditure this Quarter
(December 1980 - February 1981)
Total Expenditure to Date
Amount Remaining
Total Hours Expended
Amount Next Quarter (estimate)
Amount Required to Complete Work